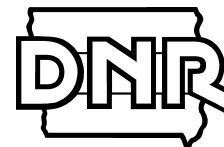


TANK MEMO



TO: Groundwater Professionals
FROM: Iowa Department of Natural Resources
Underground Storage Tank Section
Wallace Building, Des Moines, IA 50319

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General Guidance for MTBE Monitoring and Reporting

The Environmental Protection Commission adopted rules on June 21, 1999, to implement an amendment to Chapter 135 which requires soil and water samples collected at LUST sites be tested for methyl tertiary-butyl ether (MTBE). This requirement was **effective July 1, 1999**. These rules can be found on the UST web page (<http://www.state.ia.us/epd/ust/gwprof/gwbb.htm>) or a hard copy may be obtained from DNR by telephoning 515/281-6010.

Applicability: Soil and water samples collected for LUST investigations must be tested for the presence of MTBE. This applies to Tier 1, Tier 2, Tier 3 assessments, site monitoring (pre- and post-RBCA), CADR development and implementation (including pilot testing, excavation samples, etc.), and remediation monitoring (influent and effluent water samples). MTBE analysis does not need to be conducted on samples collected in association with tank closures or site checks unless the site check samples are used in Tier 1 or Tier 2 evaluations.

MTBE analyses must be performed regardless of what type of petroleum release (i.e., gasoline, diesel, fuel oil, waste oil, motor oil, hydraulic fluid, jet fuel, kerosene, mineral spirits) is under investigation.

Laboratory Analysis: MTBE sample analysis must be performed by a laboratory certified under 567—Chapter 83. A list of Iowa Certified Laboratories may be obtained from DNR by calling 515/281-6010, or from the University Hygienic Laboratory's web page: http://www.uhl.uiowa.edu/Services/LabCertification/f_certified_all_form.html. Soil and water samples must be properly preserved and shipped to a certified lab within 72 hours of collection. Groundwater professionals must comply with the selected laboratory's requirements and procedures regarding shipping and handling, use of trip blanks, chain-of-custody forms, etc.

Laboratories must use one of the following methods for sample preparation and analysis for MTBE:

- Gas Chromatography/Mass Spectrometry (GC/MS) version of OA-1, "Method for Determination of Volatile Petroleum Hydrocarbons (gasoline)," revision 7/27/93, University Hygienic Laboratory, Iowa City, IA; **or**
- US Environmental Protection Agency Method 8260B, SW-846, "Test Methods for Evaluating Solid Waste," Third Edition.

Laboratories performing the analyses are required to run standards for MTBE on a routine basis, and standards for other possible compounds like ethyl-tertiary butyl ether (ETBE), tertiary-amyl methyl ether (TAME), diisopropyl ether (DIPE), and tertiary-butyl alcohol (TBA) to be certain of their identification should they be detected. When these chemicals are detected, their presence will be noted in a comment on the lab data sheet - they will not be quantified. Laboratories must be able to achieve a minimum detection level of 15 ug/kg for MTBE in soil, and 15 ug/L for MTBE in water.

Reporting: MTBE monitoring results must be reported to the department on a Microsoft Excel 5.0 Spreadsheet using the format and heading order as presented in the attached example document called "MTBE Sampling Results". The MTBE spreadsheet form may be downloaded from the UST web page: <http://www.state.ia.us/epd/ust/lqust.htm>.

The "Monitoring Event" column should be completed with the stage of the RBCA process in which the samples were collected (e.g., Tier 1, Tier 2, SMR, pre-RBCA SMR, CADR Remediation sampling). Sample locations should be clearly identified. If the sample location is not a monitoring well or borehole, the Sample ID should be descriptive enough to tell the origin of the sample (e.g., Municipal Well #1, influent to carbon treatment system, etc.)

Sampling dates must be entered in the mm/dd/yyyy format. Provide ground surface and sample depth elevations in feet above sea level (ASL) measured to the nearest 0.1 foot and static water level in feet ASL measured to the nearest 0.01 foot.

Concentrations must be reported in units of mg/kg for soil samples and ug/L for water samples. If there are no results for a particular sample, the column must be left blank (e.g., a water sample was collected from MW-13, but no soil sample was collected, leave the column "MTBE Soil" blank). If the concentration reported is less than the quantitation limit, indicate the quantitation value preceded by the less than symbol (e.g., < 15). MTBE data collected prior to July 1, 1999 should not be submitted.

MTBE results from treatment system samples are to be tabulated in the MTBE-Groundwater column (influent, effluent). Additionally, if ethyl-tertiary butyl ether (ETBE), tertiary-amyl methyl ether (TAME), diisopropyl ether (DIPE), or tertiary-butyl alcohol (TBA) is identified in the sample, this should be reported in the "Comments" column.

A diskette containing the spreadsheet file along with a hardcopy of the MTBE Excel spreadsheet must accompany any LUST report submitted to the department (Tier 1, SMR, pre-RBCA SMR, CADR, etc.) with the exception of free product recovery reports. The MTBE Excel file may be copied to the same disk submitted with a Tier 1 report, Tier 2 SCR, or version 2.2 SMR (forthcoming). The Excel file name should contain the LUST number for the site (e.g., M8LTA26.XLS). A separate disk must be submitted for each LUST site (i.e., multiple files for multiple LUST sites should not be submitted on one disk, nor should multiple LUST sites be compiled into one spreadsheet file).

Copies of chromatograms and associated quantitation reports for the above testing **do not need to be submitted** to the department, but must be made available upon request. The laboratory data sheets which contain the MTBE sample results must be provided when the disk is submitted. The laboratory data sheets should not be incorporated into the report being submitted. Ensure the laboratory data sheets contain the information required in 567--135.16(2).

Update on Water Supply Sampling in Vulnerable Bedrock Regions

The project to sample water supplies in vulnerable bedrock regions is underway, and some results have been reported by University Hygienic Laboratory. In addition to BTEX and TEH, MTBE analysis is being conducted. Currently, the information is available for review in hardcopy form at the DNR Records Center, Wallace State Office Building, Des Moines. The records are filed under LUST Bedrock by Public Water Supply (an example file name: LUST Bedrock PWS - Albion). A list of public water supplies sampled in bedrock regions will be kept at the Records Center. You will soon be able to access these records on the UST web page (<http://www.state.ia.us/epd/ust/lqust.htm>). The information will be updated as laboratory results are obtained.

Contact Person

Contact Elaine Douskey at 515/281-8011 if you have questions about MTBE sampling and reporting or the water supply sampling in vulnerable bedrock regions.